CLAIMS

What is claimed is:

1. A method of color correcting a scene, comprising:

predicting at least one frequency for a variation in the illumination in the scene;

measuring light from the scene at a periodic rate, where the periodic rate is different than any of the predicted frequencies, using an exposure length that is different than any of the periods of the predicted frequencies;

detecting the presence of an artificial illuminant when the measured light from the scene contains periodic changes;

correcting the color in the scene due to the artificial illuminant.

2. The method of claim 1 where the periodic changes are variations in brightness.

3. The method of claim 1 where the light from the scene is focused onto a photo sensor and the periodic changes are variations in contrast.

4. The method of claim 1 where the periodic rate is close to, but not equal to, twice a common AC frequency.

5. The method of claim 4 where the common AC frequency is 60 Hz.

6. The method of claim 4 where the common AC frequency is 50 Hz.

7. The method of claim 1 where the exposure length is much smaller than ½ of any of the periods of the predicted frequencies.

8. A method of selecting the illuminant type in a scene, comprising:

predicting a frequency for a variation in the illumination in the scene;

measuring light from the scene at a periodic rate using an exposure time that is equal to the period of the predicted frequency;

detecting the presence of an artificial illuminant when the variability of the measured light is high;

selecting an artificial illuminant type for the scene.

9. The method of claim 8, further comprising:

re-measuring light from the scene at a periodic rate using an exposure time that is equal to the period of a second predicted frequency;

detecting the presence of an artificial illuminant when the variability of the re-measured light is high; and

selecting an artificial illuminant type for the scene when an artificial illuminant is detected;

selecting a natural illuminant type for the scene when no artificial illuminant is detected.

10. A method of color correcting a scene, comprising:

predicting a frequency for a variation in the illumination in the scene;

measuring light from the scene at a periodic rate, where the periodic rate is equal to an integer multiple of the predicted frequency, using an

exposure time that is different than the period of any of the predicted frequencies;

detecting the presence of an artificial illuminant when the variability of the measured light is high

correcting the color in the scene due to the artificial illuminant.

11. The method of claim 10, further comprising:

re-measuring light from the scene at a second periodic rate, where the second periodic rate corresponds to a second predicted frequency;

detecting the presence of an artificial illuminant when the variability of the re-measured light is high and correcting the color in the scene due to the artificial illuminant; and

determining that the scene contains only small amounts of artificial illumination when the variability of the re-measured light is low and correcting the color in the scene based on a natural illuminant.

12. An apparatus for color correcting for the artificial illumination in a scene comprising:

a photo sensor array, the photo sensor array configured to measure light from the scene at a periodic frequency using a predetermined exposure time;

a processor, the processor configured to determine the presence of an artificial illuminant by examining the measured light from the scene for periodic intensity variations, the processor also configured to color correct the scene based on the presence of an artificial illuminant.

13. The apparatus of claim 12 where the periodic rate is close to, but not equal to, twice a common AC frequency.

14. An apparatus for detecting the type of illuminant a scene comprising:

a photo sensor array, the photo sensor array configured to measure light from the scene at a periodic frequency using a predetermined exposure time;

a lens configured to focus the light from the scene onto the photo sensor array;

a processor, the processor configured to determine the presence of an artificial illuminant by examining the measured light from the scene for periodic contrast variations, the processor also configured to color correct for the illuminant type in the scene based on the presence of an artificial illuminant.

15. The apparatus of claim 14 where the periodic rate is close to, but not equal to, twice a common AC frequency.

16. An apparatus for color correcting a scene, comprising:

a means for measuring light from the scene at a periodic frequency using a predetermined exposure time;

a means for determining the presence of an artificial illuminant by examining the measured light from the scene for periodic intensity variations

a means for color correcting the scene based on the presence of artificial illumination.

17. A digital camera comprising:

a photo sensor array, the photo sensor array configured to measure light from a scene at a periodic frequency using a predetermined exposure length;

a lens configured to focus the light from the scene onto the photo sensor array;

a processor, the processor configured to determine the presence of an artificial illuminant by examining the measured light from the scene for periodic variations, the processor configured to color correct the scene based on the presence of artificial illumination.

18. A method of color correcting a scene, comprising:

predicting at least one frequency for a variation in the illumination in the scene;

measuring light from the scene at a periodic rate, where the periodic rate is different than any of the predicted frequencies, using an exposure length that is different than any of the periods of the predicted frequencies;

comparing the variability of the measured light to a first threshold;

correcting the color in the scene for natural illumination when the variability of the measured light is below the first threshold;

correcting the color in the scene for artificial illumination when the variability of the measured light is above the first threshold.

19. The method of claim 18, further comprising:

comparing the variability of the measured light to a second threshold where the second threshold is higher than the first threshold;

correcting the color in the scene for incandescent illumination when the variability of the measured light is below the second threshold and above the first threshold;

correcting the color in the scene for fluorescent illumination when the variability of the measured light is above the second threshold.